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Edited by JOHN BARTLETT.

SOME POINTS TO BE CONSIDERED IN THE CHOICE OF A STUDIO.

AMONG the numerous considerations that would have an influence upon the photographer who was either choosing a new studio or starting out in business, the money question would of course stand first. Whether to rent expensive rooms in the centre of a fashionable and crowded neighborhood, trusting to abundant patronage to make up for the greater outlay, or to discreetly take a less public and less expensive site for the photographic studio, will form a serious part of the business, to which every attention must be paid.

For our own part, we are decidedly in favor of having the studio in a well-frequented neighborhood, with an entrance that will command attention from the passers-by, and not be overlooked owing to the narrowness of the doorway or absence of show-cases. Great attention should be paid to these latter, and their contents changed from time to time. It has often been questioned whether the custom of putting the work of others into one's own show-case, thereby leading the public to believe that the work was one's one, was either expedient or honest. We think that anything serving to make a display and attract persons into the studio is permissible, provided of course that the name of the maker (no matter who it is) be in its proper place on the pictures exhibited.

The question of getting up stairs is an important one. All the photographer's patrons can hardly be expected to skip up three or four stories two steps at a time, and there are numbers of valetudinarians and lazy folk, whose money is just as good as anybody's else, and whose whims in respect to stair-climbing should receive due attention at the photographer's hands. In most of the larger buildings now being erected in our cities and towns the elevator is a prominent feature. This facilitates all business conducted on upper floors in a very great degree, rendering just those portions of the building so useful to the photographer not only easy of access, but also comparatively cheap in rent, when the superior advantages are taken into account.

The well-known old caution not to build the studio in a well, or in other words not to allow the light to be cut off or interfered with by higher buildings near at hand, is quite as worthy of observance as ever. Although we can do with our modern gelatine plates what collodion operators would never have dared to undertake,

we are still not one whit less dependent upon the light than they were for the producing of good, plastic, artistic portraits, and the necessity of having the portrait studio in a well-lighted position is no less urgent. Reflections from white walls or light-colored objects of any kind near at hand are very injurious, because they make the light in the studio treacherous and uncertain. For portraits we should never think of anything else than a north light, while if copying or slide-making formed the principal part of the work, we should be equally anxious to secure the sun's full power with southerly exposure.

It is not our intention to enter here into the details of the construction of the glass-house, but in such a tricky climate as ours, it will be well to remember the frequent occurrence of hailstorms, and to guard against the damage resulting from them by applying wooden blinds on the outside, and having suitable levers or other gear arranged so as to control them from inside the studio.

The business or occupation pursued on the floors below is another point that should not be overlooked. The days when the tenants of the lower parts of a building could force the unfortunate photographer on the top floors to suspend operations owing to the escape and descent of the fumes of ether and acetic acid, have now pretty well passed by. In fact we may say that the photographer now-a-days is more likely to be annoyed by bad odors from below penetrating up through the hallways and floor. Where the comfort of the sitter is properly regarded, we should not like to have a drug-store or restaurant on the floor below, and anything making much noise or jarring motion, as steam-power or hammering, would likewise be very unfavorable. There are many nervous individuals who would do fairly well before the camera in a quiet room, but who would be uncontrollable under the circumstances mentioned.

The water supply will of course be an important point to consider when choosing a site for the studio. The advantages of being high up above the street where things are quiet and the light good, are directly counterbalanced by the difficulty of getting a sufficiency of water. Cities might indeed be mentioned where there is no trouble of the kind, owing to the reservoirs being at a considerable height above the level of the streets, but these are the exception. In places like Philadelphia and other cities lying in a flat country, the water supply at the tops of high buildings is so poor that tanks have to be sometimes set on the roofs to give the desired supply. It will often be necessary to suspend work entirely, and thoroughly clean out the mud and sediment collecting at the bottom of these tanks; and an efficient water-filter should always be in working order to supply a sudden call for clean water, as is so often necessary for the final washes of paper prints and of negatives. Many a fine silver print has been spoiled by mud in the wash-water settling upon its face while wet and drying into the albumen so firmly that no after-treatment would remove it.

Although it will always be very desirable to have the full flow of water in the dark-room, yet we can imagine it possible for a business to be successfully carried on by merely rinsing off the hyposulphite up stairs and then having the negative conveyed to the cellar, where there would be a fuller and more uninterrupted supply to finish the washing. If this plan were followed, a small elevator for the purpose, somewhat like those used in libraries for transferring books from one floor to another, could be arranged.

The proper insuring of the studio and its contents will necessarily demand some time and thought. In so far as the risk of fire from inflammable nature of the chemicals used is concerned, we can congratulate ourselves that it is now very much lessened since the introduction of gelatine plates. A reduction of from ten to twenty five per cent. in the photographer's favor was made by the insurance companies when the gelatine dry plate finally obtained its foothold, driving out the dangerous ether and gun-cotton from the gallery. The companies, however, do not regard the carrying on of a photographic business as safe from risk even now; for bad fires have been started by the oil-stove or alcohol lamp which is kept burning under the print-burnisher. Special instructions should always be given to the assistants who have this apparatus in charge.

It may not be generally known that negatives are classed by the companies among works of art. Indeed the negatives are now considered by the companies and their agents as the principal risk. Nor is this risk lessened in the slightest degree if they are made on paper or on films instead of glass; their perishability from fire, smoke and water being quite as great as when made on the more breakable material. If a photographer were to be asked in which form a negative was least destructible, we know very well what the answer would be; so that it is quite a useful business lesson to thus observe how differently the same matter will appear from different business standpoints, and how difficult it is to reconcile conflicting interests. In a particularly bad fire that occurred in Philadelphia some years ago, one of our oldest and most important portrait establishments lost a very valuable stock of negatives of well-known citizens, many of whom were deceased. The loss in this case could not in any sense have been actually covered by the insurance, inasmuch as the negatives when once destroyed could only be in rare cases replaced at all, and this by the very unsatisfactory process of copying paper prints which had suffered from time and handling. The income received from printing the original negatives was a fluctuating one, of course, but likely to increase rather than diminish with the lapse of time. Where a specially valuable stock of negatives is owned, it will be a safe precaution to pay an extra premium on them apart from that on the general policy.

ELLERSLIE WALLACE.

MISCELLANEOUS NOTES.

QUICK AND SLOW PLATES.—There are certain photographic subjects which seem to have a sort of periodic revolution like the comets. From time to time they come up for discussion in our journals, and receive all due attention, but, without having their exact value or importance determined, are suffered to wander off again until the time of their recurrence. One of these subjects of short circuit is the relative merits of slow and rapid plates.

The question really to determine is not, Shall we use slow or rapid plates? but What character of plate is best suited to a special purpose? For instance, will a slow plate, necessitating long exposure, render more faithfully the beauties of a landscape shaded by o'erhanging boughs, or the Autumnal foliage with its non-actinic reds and yellows and browns? or is the effect of motion upon the foliage sooner caught and

translated upon the film by reason of its great sensitiveness?—movement which might have escaped the tardy perceptions of a slower plate. Is contrast and vigor more to be desired than softness and delicacy? We cannot have the penny and the cake too; but must determine what qualities can be sacrificed without injury to the result.

It is absurd to expect one kind of plate to do all sorts of work equally well, and the advocates of rapidity or slowness at once find themselves, when on the defense, compelled to qualify all their sweeping assertions by numerous "of courses" and "excepts."

MORE ABOUT HARDNESS IN PRINTS.—Undertiming of the negative is not always to blame for hard black-and-white prints. We have shown how over-fixing will make void all the good qualities of a negative by sapping out the very life of the photograph. There is another cause which nullifies the best efforts of the negative maker,—that is, the yellow stain left in the negative after fixing. This yellow stain is produced by the pyro, which has not been thoroughly washed out of the film after development, and which is made indelible by the hyposulphite of soda. Not only are the printing qualities of the negatives interfered with, but the high lights are prevented from registering upon the albumen paper the rich detail which they may possess, and the whole photograph is made harsh and chalky. The use of sulphite of soda in the pyro developer has a tendency to lessen the liability to stain, but even with its use, if proper washing is not resorted to after development, the yellow color is bound to appear. A weak solution of chrome alum poured over the negatives after development and a good rinsing under the tap will insure a clean, beautiful plate, which delights the printer.

OVER-DOSING WITH REFLECTORS.—One of the greatest charms in photography is the delight it gives us in the perfect rendering of texture, provided that texture have none of the adactinic colors. Fabrics having decided shades of yellow and red cannot be properly translated in texture. It is just here that photography somewhat fails when it seeks to render the delicate texture of the human skin. The fairest face has some yellow in it, to say nothing of the rosy bloom, and it is only in those faces where the lily usurps the dominion of the rose that the finest effect of light and shade is produced.

The yellow in the average face is more predominant than inexperienced people suppose, and it is just for this defect in photography that we have to seek assistance from the retoucher.

The retoucher, unfortunately, is too often puffed up with the idea that he can dress nature to advantage, tone down her incongruities, smooth out her defects. We are all willing that he should aid the defective powers of photography, and make up for her want of discrimination when she emphasizes mole and freckle, and spot and blemish, but we do abhor the monotonous stipple which converts a human face into a plaster bust.

However, it is our purpose just now to exonerate the retoucher, and to lift some of the blame from his pencil point.

We were recently shown a number of photographs of heads, upon which our opinion was asked. We decided at the first glance that the retouching had been too plentifully applied, and suggested that the results would have been better had merely the imperfections been corrected. We were, however, surprised to learn that the negatives had not been retouched, and, on examination, we found that the want of texture was due to over-reflection. The photographer had made use of silvered reflectors to light up the shadowed side.

In our early experiments with magnesium flash light, we employed silvered reflectors, but found that the light on the shadowed side destroyed all modeling of the face. We then substituted ordinary newspaper. The results were better; but now we get our best effects without any reflectors whatever, merely by judiciously arranging the direction of the light.

We would not, however, advise the discarding of all reflectors, but suggest the exercise of judgment in their employment.

EXPRESSION IN PORTRAITS DEPENDENT UPON ACQUAINTANCE WITH DISPOSITION OF THE SITTER.—The amateur has a great advantage over the professional in possessing, in most cases, some knowledge of the sitter's disposition, so that he can judge whether the expression at the time of taking is normal or not.

The professional sees his clients for the first time when they enter his studio, and his only resource is in a proper exercise of his skill in reading characters by faces, but even here he finds the scope of his judgment limited.

People are not themselves when they set out with the purpose aforethought to have their pictures taken. Which shall we sacrifice, grace or truth?

Suppose a person of melancholy mien enters your studio,—one who is wont to wear upon his countenance a woe-begone look. Are we to take his face as the sign-board which sets forth the commodity of sighs and groans he has stored within?

"The sad account of fore-bemoaned moan."

What shall we do? Pose him according to our most graceful standard, and, at the critical moment, summon up with the magic formula, "Now then, look pleasant," the beatific expression? or shall we let nature have her perfect way, and mirror the true inwardness of the man? Or suppose fortune sends us another sort of nature's makings,

"A merry man whose eyes beget occasion for his wit,"

but who, for the time, has laid aside, with becoming gravity, his merry mood, having possessed his soul with the important knowledge that he is now going to have his picture taken.

How is one to know that this assumed expression is but a mask of the man's real disposition, and so entirely unlike what his friends are accustomed to take as his true image and superscription?

The desire dominant in most everybody when sitting for a picture is that the issue

may be successful, and it is just this anxiety which defeats all endeavors of the photographer in securing a good or natural expression. Now, it is the duty of the operator to possess himself of enough tact to discern in everyone who comes before him some indication of the peculiar disposition, and to seek by all possible means to divorce the sitter's attention from himself, that his true character and similitude may be caught upon the sensitive film.

It is amusing to watch the antics of the features of this, that or the other one who enters our studios. Some "with eyes severe and beards of formal cut," pose with the dignity of a lord high chancellor; others assume at once a sweet angelic expression, with eyes upturned, gazing on heaven's winged cherubim; some will continue to smile like Malvolio, nothwithstanding the obstructions in the blood in the shape of the headrests and inquisitorial chairs.

To be successful one must know his client, or he will fall into woeful error in his attempts to get a "striking likeness," as it is called. And herein, as we have said, the amateur has the great advantage over the professional.

DISPOSITION OF THE HANDS IN A PHOTOGRAPH.—Every photographer would like to alter that passage in the Scripture where it speaks of the tongue as an unruly member. He would at once substitute hands in the new version.

What shall we do with the hands in our photographs? They cannot be ignored, for really they are accessory to the expression of the face. All the members of the body co-ordinate to express the idea or feeling dominant in the mind—the hands pre-eminently. Too often the photographer is content to secure a pleasing expression upon the face, and neglects the proper part to be played by the hands. The photographer has tried to improve on nature, and to arrange them in a manner which he thinks beautiful.

The proper disposition of the hands calls for the exercise of the greatest judgment. How often does a photographer convince us how woefully these members have offended, and how much better it would be to have cut them off, and to have cast them into outer darkness.

But they cannot be got rid of so easily; they must be there sometimes, too, or their absence would work as disastrously as their ungracious presence. How do the painters manage with the hands of their subjects? The hands in Rembrandt's portraits, as in those of Holbein, do all that is asked of them in a very proper, natural and expressive way; but Vandyke's hands are very finical, full of affectation, and an assumption of grace. Study Holbein and Rembrandt, and use a long focus lens, so that you will not be constrained to tell your subjects to keep the hands back as far as possible, that they may not be exaggerated in the photograph. Photographers generally try to get an edge presentation of the hands. This is jumping a difficulty. Study the disposition of the hands, along with the expression of the face; *let one sentiment animate both, or, rather, all three.*

Having disposed of the hands the inquiry arises, What shall we do with the feet? for literally they do sometimes put themselves in a picture, to its great detriment. A

naked foot is altogether out of the question, unless our model has never worn a shoe.

There is truly nothing romantic in a boot or shoe. We would as lief look for grace in a high hat. A slipper is better. But sabots or wooden shoes can be often made to show us a graceful turn in a rustic model.

SHAPE OF OPENING IN DIAPHRAGM.—We have heard it asserted with all gravity that the shape of the aperture in the diaphragm of a lens materially affects the character of the photographic picture. We are told that a view extending horizontally should have the opening in the stop lengthwise—that if one is taking a high building an upright slit should be employed. Some get the most charming results with a square opening, and others declare that a triangular aperture gives less exposure to the sky than the landscape, so that one is enabled thereby to secure beautiful cloud effect without shading the sky.

Anyone who understands the first principles of optics involved in the construction of lenses will perceive at once that it cannot make the slightest difference in the character of the picture whatever be the shape of the stop openings. The only object of the diaphragm is to confine the action of the light through a definite portion of the lens. Of course the view may be modified by placing the opening behind the lens, but then we could hardly call such an opening a diaphragm to the lens. Practically, as well as theoretically, it will be found that it matters very little what is the form of the aperture. The most convenient and, perhaps, the best form is that adopted by the lens makers,—the circular. We would rather question the value of a horizontal or vertical slip, imagining that it would limit the capacities of the lens, and might cause an interference between the marginal and central rays.

PHOTO-GRAVURE PROCESSES.

Read before the Society of Amateur Photographers of New York, February 12, 1889.

IN general terms all practical photographic methods and processes depend on the action of light on one or the other of two substances.

Light, under certain conditions, blackens certain salts of silver.

Light, under certain conditions, hardens certain organic substances, such as gelatine.

By the first action we produce our negatives and print our silver photographs.

By the second action we produce printing plates from which we print with ordinary printing ink.

The application of this second action is the foundation of the various processes of photo-mechanical printing.

All of these depend, of course, on both actions of light—first, in the production of the negative, second, in the production of the printing plate.

There are four leading lines of photo-mechanical printing methods—photo-engraving, photo-lithography, photo-gelatine and photo-gravure.

Photo-engraving is understood in this country to mean "cuts to print with type."

Photo-lithography is a process by which a stone is prepared for ordinary lithographic printing by photography instead of by hand.

In both photo-engraving and photo-lithography the prints must be made in dots or lines, but, by an ingenious device, the half tone of the photograph is closely imitated. This is effected by breaking up the half tone into a series of very fine dots or lines.

The methods mostly in use by us are those which give true photographic half tone.

These are the photo-gelatine and the photo-gravure methods.

The photo-gelatine process is known under a multitude of names; Albertype, heliotype, artotype, Lichtdruck, Indo-tint, collotype, are some of them, but they all mean the same thing; that is, printing from the surface of a layer of gelatine, variously supported, and on which a printing image has been produced by light.

The *modus operandi* of obtaining such an image is, in its broad principles, simple enough.

An ounce of gelatine is dissolved in, say, ten ounces of water, at a temperature of 100 Fahr. To this solution is added from 40 to 50 grains of bichromate of potash, and sufficient alcohol to make an easy-flowing liquid. This is flowed over a plate of glass or metal, and dried in an oven at a temperature of 120 to 140 degrees Fahr. on a level plate, so that, when dry, a very thin, even solution of bichromatized gelatine remains on the plate. The gelatine-coated plate is exposed to light under a negative, and now comes in the second action of light. The light passing through the negative hardens the gelatine in the shadows, partly hardens it in the half tones, and produces no effect where it is prevented from penetrating by the opaque parts of the negative.

The gelatine-coated plate, which now has the printing image produced on it, has only to be washed in water to prevent the further action of light, when it is ready for the press.

It is inked up in the same general method that a lithographic stone is inked. But the sun has been the artist, and has drawn the half tone of the photograph as no hand could have done it.

Photo-gelatine printing, to the reader and onlooker, seems to be the simplest thing in the world.

On account of the "contrary" character of gelatine, it is in truth the most difficult, as those who have been longest at the work best realize.

It will be seen that the reproductions by this process have a character all their own, and for a certain delicacy of result and true photographic effect they are unapproachable.

In the photo-gelatine process it will be seen that a new printing surface or material, gelatine, has been brought into use.

In photo-gravure, the oldest printing material, copper, and the oldest method of printing is employed, but the action of light takes the place of the engraver's tool. There is not time at my disposal to do more than briefly sketch the processes employed.

The result desired to be obtained is an intaglio plate to be engraved by photography, and to be used for printing on a copper-plate press.

In the photo-gelatine process we have described how a plate is coated with a thin, even layer of bichromated gelatine made sensitive to light. If we prepare this gelatine on a copper plate, and, after the action of light, place the plate with its light-produced image in an etching bath, it is evident that the etching fluid will penetrate the gelatine where the light has not acted, and where, therefore, the gelatine is not hardened. It will penetrate less where the light has hardened the gelatine slightly, and it will not penetrate at all where the gelatine is altogether hardened by light. In this way we have a plate etched more or less deeply, according to the gradations of the photograph, and therefore reproducing all the gradations of the photograph. This, very broadly, is the underlying principle of our process of photo-gravure.

Two essential conditions must be observed, however, in order to make the process practical.

In the first place, in using a negative to print on the gelatinized copper plate, it is apparent that the picture would be a negative. Therefore a positive or transparency must be made from the original negative to print on the gelatinized plate, in order that the final picture may be a positive.

The other necessity is that there must be a "grain" on the copper plate in order to give it an ink-holding capacity. This is effected by "laying a ground," as in the aquatint method, or by dusting the surface with resin or asphalt which is melted by heat—in both cases, of course, before the application of the gelatinous surface.

The etching fluid does not penetrate these fine points of resin, and the underlying copper is protected and remains in the shape of a number of minute pyramids, which prevent the ink being wiped out. The rest of the process of reproducing photo-gravure pictures is the ordinary method of copper-plate printing, requiring, however, greater skill and care in its execution.

Whilst photo-gelatine printing is marked by the delicacy of its results, the characteristic feature of photo-gravure is its strength and richness, which may be further heightened in the various steps of the process, as well as subsequently by the hand of the graver.

ERNEST EDWARDS.

FIGURE IN LANDSCAPE AND GENRE.

BY GRAHAM BALFOUR. *

THE employment of models in photography is, perhaps, verbally a more exact title for the remarks which I propose to make to-night, but that seems somehow to have a more utilitarian, at once a more mechanical and more practical, ring than can belong to any hints of mine, and therefore I have asked you to listen to a few suggestions on the use of figures in landscape and genre.

This limitation will, at any rate, serve to show that I refer only to those photographs which are taken as pictures for their own sake. I do not deal with illustration of places or people, nor with scientific work, but solely with original photographs

* Read before the Camera Club.

taken for the intrinsic beauty or interest of the subject, as visibly expressed or actually suggested in the print, and carried to the utmost perfection possible to the means employed.

I assume that the pictures are satisfactory in composition and tone, that they are correctly exposed, happily developed, and suitably printed, for none of these points am I now going to discuss.

In landscape the necessity for figures is a vexed question, and one with which I at first intended to begin this paper. But it is too wide and important a subject to touch merely as a side issue, and I will here simply state my own opinion that, with two or three obvious exceptions, landscape without the figure of man or beast is a mistake, and that the result of such an omission is want of purpose and of interest.

Genre painting, at any rate, always includes figures, except in those pictures of still life, drawn mostly from the dinner-table and the larder, which are so uninteresting in colors, and in photography fortunately are seldom seen. The exact content of genre is defined by Littre as painting other than historical or landscape, and certainly those are the three classes of the old division of the art. But portraits I would now place in a class by themselves, or, at any rate, exclude from the following remarks, and with the still-life portion of genre I have evidently no concern.

Thus for genre, as the domain of character and incident, I presuppose figures, but the border-line between it and landscape with figures is notoriously hard to draw. Probably no scientific frontier is possible; roughly, the division is made by the size of the figures and the expression of the face accordingly as it is visible or otherwise. I attempted a classification on the basis of visible expression, but it would not hold, and fortunately an exact definition is here unnecessary. The same rules apply in each case: on the size of the figure chiefly depend the uses to which we put it, the purposes for which we employ it. The smallest figures are generally introduced as a spot in composition, or to save the picture from being entirely inhuman and desolate. Slightly larger figures, which are still too small to exhibit the expression of the faces, yet tell their story by gesture or attitude. Most of the rules relating to facial expression apply equally to gesture, and therefore I pass on, merely noticing that the smaller the figures are, the less effect do they produce, but, at the same time, the easier are they and less intractable; for when the face is not seen the figure is much simpler to pose, and even if the attitude is slightly strained or self-conscious, this fault is less conspicuous, and any shortcomings of costume or model are less glaring. Thence we pass into the debatable land where the figures are of exactly equal importance with their surroundings, and the boundary question is mostly settled by prejudice. Beyond this comes the region where figures are all in all, and the landscape dwindles away into nonentity. I believe that the whole of this continent is under the same laws, but that the different rules differ in importance in various provinces. To drop metaphor, it is manifest that the larger and more distinct the face is, the greater is the care required in dealing with it.

Most of the general rules of art which can be laid down for the guidance of photographers can be discovered by common sense, and most of the crimes committed in the name of photography are due rather to the want of reflection than to deliberate depravity. Many photographers, especially the scientific workers, have a horror of art-rules, which they consider altogether unnecessary and arbitrary. It is a

fact that once a truth has been decanted into a certain form of words, it has necessarily ceased to be the whole truth, for there is always some leakage and some change in the process. All formulated maxims are very condensed records of experience, and are of little other use than to serve as hints and suggestions, mostly on the prohibitive side. Lawmaking is the first conscious stage of any art, but unless the set forms are sooner or later altered, modified, adapted, and at times broken, that art is incapable of any further progress. Nevertheless, in the deadest formula always there has once been a germ of life, and to preserve this and render it once again useful is the best service any critic could perform. But my point is, that most of the rules of art were not in the beginning mere pedantry and charlatanism, but fresh, vital and pregnant discoveries.

Rules, again, are supposed to be cramping and destructive of life and enterprise. An art that is as full of stupid sign-boards as Mr. Du Maurier's picture of Hampstead Heath is neither pleasant nor profitable. I only hope that I may never say anything that will discourage energy or new departures. Experiment is the life of art, especially of a new art. Genius generally disproves a few rules. If you think you see a new line, consider it fully, then have a dash at it, then see where you have got to. Only, if you fail, for art's sake do not ask anyone to believe that you have succeeded, or to follow you. There are wrong ways as well as right ways, and if you can discover which is which, it is only a waste of time to start on the former. Let us proceed to see what directions we can lay down for photography.

1. The first thing to inquire in any art is, What is its aim, and what means has it to carry out that aim? If we discover these means and their capabilities, and do not attempt to overstrain them, we are not likely to go far wrong in that art.

Now every photograph, so far as it is a photograph in my present sense, has been produced by two agencies—by the joint action of man and his apparatus;—by the human and artistic element, and by the mechanical and scientific element.

It is thus plain that there are two sets of limitations in photography, and consequently two sets of rules which have to be taken into account.

I will first take the material limitation,—the restricted powers of the camera and lens. Now the worst point about a lens is that it has little or no imagination, but is so very matter-of-fact. It sees truly, but it can see nothing but what is just in front of it in an actual, material shape. Thus (*a*) it can only deal with the present; the past is useless to it, and though a perfect observer and recorder of passing events, it is useless for retrospect. It writes chronicles, not history. (*b*) It can do no ideal or imaginary work.

Next let us consider the restrictions of the artist himself. The human eye and brain preside over all art. Using other means than the camera, they can call up the past and reclothe it in visible form, or give outward embodiment to ideas which have only existed in the mind, or select certain out of many objects in the scene before the eye, and represent these alone to the exclusion of all ease. But the human retina is in some ways less perfect than the lens and gelatino-bromide plate. As far as light is concerned, they are fairly equal, though the right kind of light is cumulative for the plate, which thus in time records what the eye can never see. But as far as art is concerned, the chief difference lies in the power of receiving instantaneous impressions. The lens and plate can record attitudes and effects which the eye can

never perceive; and what the eye cannot see in nature, it naturally refuses to recognise in art.

Thus from artistic photographs we must exclude, on the one hand, what does not exist in outward nature, and, therefore, can never itself be transmitted through the lens; and, on the other hand, certain actually existing facts discovered by the lens, yet which the eye can never see, and consequently would never select for a picture.

Now it may be asked why we should concern ourselves with the nature of the means, and why we may not use any results we can obtain, and be thankful.

As to the limitation of the human eye, I can only say that art in its present meaning depends upon the human observation of nature. If you develop an art based on instantaneous photography, you embark in an altogether new and distinct enterprise, and you have my best wishes for your enjoyment and success. But you have no connection with art as it now exists.

As to mechanical limitations, the argument that the end is all in all, and that any means may be employed to reach it, is the one which has been heard oftenest in the battle between the two styles of wood-cutting, the old and the new, the schools represented respectively by Bewick and the *Century Magazine*. The essential feature of wood-engraving is, of course, that it is the portion of the wood block cut away which is rendered white in the print, whereas in metal plates every cut is printed black. Consequently the white line has been treated as the characteristic of the wood-cut, and upon it the old craftsmen relied for their effects, while the new school, on the other hand, has set itself to produce masses of half-tone with a great variety and delicacy of gradation. The former declare that this may be beautiful, but it is not of the nature of genuine wood-cutting. The young men answer, "That may be true, but what do we care? As long as our results are admirable we will continue to produce them by any means in our power."

I am not responsible for the defence of the new wood-cutting, but as a matter of fact, I consider it to be quite legitimate, because the white line is not so absolutely essential a part of the prints from wood-blocks that any reproach is due to the artists who neglect it. To the outsider, any one mode of cutting the wood, if it is fairly within the power of artist and tool, seeems as good as another, if the impressions are equal. As long as the change of method does not result in a deteriorated product, greater freedom of working conditions must be a benefit to the art at large.

But with us in this instance it is otherwise. Reality is so invariable a condition of photography that it is inextricably bound up alike with end and means. A photograph cannot be a photograph at all in my present sense unless it has been taken from a real object. It is no case of alternative treatments, which both issue in a legitimate result; but here if the making is conducted on wrong and dishonest principles, the thing made is inherently bad.

I do not wish to introduce any irrelevant philosophy, but may remark that all this artistic morality is quite different from the private morality of the operator, and that transgression of it merely vitiates the product in which such artistic fraud appears. I bring this in because I believe that a good deal of harm has been done to art by the supposed identity of æsthetic and ethical morality; I am certain, at any rate, that a great deal of nonsense has been talked about it, but here I am careful to recognise

the distinction, and speak only in terms of art. An art has certain limitations; that is obvious. If it go beyond them by some trick, and produce a result which cannot be what it pretends to be, and only passes because it is a result possible to some other art, that is artistic dishonesty. Not only must it be in the long run unprofitable and disadvantageous, but it cannot have any real and honorable life of its own.

This, of course, does not exclude "dodges," double-printings, and the like, which are but remedies applied to the shortcomings of our tools, provided always that the results are more and not less true to nature than they would otherwise have been, and are consistent with the means which must have been employed to produce them.

Now let us leave these rather dreary generalities, and examine in detail a few concrete offences against Reality. This will fall into two divisions—Human, the reality visible to the eye; and Mechanical, the reality confrontable by the camera.

As to Human Reality, there are certain subjects to which it is advisable or necessary to give very rapid exposures, such as animals, the use of which I shall recommend later on. Now, in instantaneous pictures we have to be very careful of our attitudes. Whence man originally derived the idea of the gait of horses, such as we see expressed in pictures, I do not know. I suppose they are, after all, "impressions;" that having, like a Japanese artist, carefully studied the animal in motion, the painter then sat down to produce the four legs in attitudes which should give a general effect of its action, and some one early version was adopted as the pattern which, with occasional slight modifications, was followed for centuries. So little capable was the human eye of following such rapid motion, that, as you will find in the Badminton volume of Racing, Dick Christian, a man conversant with horses all his life, stated and firmly believed a theory that, after a jump, a horse always alighted on its hind legs.

Some of the attitudes discovered by photography were entirely novel and incongruous, possible only to rapidly-moving bodies, and that for a brief instant; others do not differ so widely from the accepted conventionalities; and these, being representative and typical parts of the action, we are gradually being educated to adopt. I have noticed, for example, that Mr. Gow is always very careful in the horses in his fine battle pictures to employ attitudes alike truthful and graceful, though I do not know anything about his methods.

But unfortunately this fact leaves the success of a good many of our photographs to mere chance, since a moving animal in a prominent spot may come out in a ludicrous neck-and-crop attitude, at once incongruous and apparently impossible. Even the walk of a cow, for example, I have always found to be more ungainly than would have been imagined. Homer's "trailingfooted" oxen are certainly better seen at rest than in motion. Where the figures are very small, the defect is so inconspicuous as to be outweighed by the advantages of the figures; but for pictorial effects it is better if possible to avoid these attitudes which cannot be maintained long enough to become visible to the human eye; and if there is no help for it, we must just take our chances, and pick our results.

(*To be continued.*)

A NEW PRINCIPLE OF HELIOCHROMY.

MR. Frederick E. Ives has embodied in his recent work, with the above title, the result of his latest ideas in solving the great problem of photography in natural colors. The author prefaces his remarks with an explanation of the two methods hitherto pursued of accomplishing the great object.

In the first, the rays of light produce the colors by their action upon peculiar sensitive compounds. In the second, which is peculiarly the process of Mr. Ives, the action of light is made to regulate their distribution in a photographic picture, automatically, through the operation of the process according to a fixed plan. By the latter method colors may be employed which are accounted natural, because they represent the primary color sensations, and may therefore be combined so as to produce all color effect, but Mr. Ives is of the opinion that it is an open question whether any process is possible which could so control the action of the rays of light as to cause them to select of themselves correctly such type colors.

The author briefly reviews the various attempts made by the advocates of the two processes, directing special attention to the suggestion first made by Henry Collen, in 1865, who proposed, but never carried into practice, the plan which Mr. Ives has shown to be of successful accomplishment. From this mere germ of a casual suggestion Mr. Ives has elaborated his new principle of heliochromy.

According to the views of Young, Helmholz, and Clerk Maxwell, as set forth by Mr. Ives, there are infinite vibrations in the solar spectrum, producing infinite color sensations, but only three primary color sensations, which affect three kinds of nerve terminations in the retina, producing sensations of red, blue and green, according as each individual set is impinged upon. When all sets of nerve fibres are set in vibration the sensation is that of white light.

After many experiments Mr. Ives finally arrived at an entirely new principle, which accords with this theory of color sensations.

The principle may be conveniently stated as that of producing sets of heliochomic negatives by the action of light rays in such proportions as will secure a correct representation of their action upon the sets of nerve fibrils, and images or prints from such negatives with colors which represent the primary color sensations.

A set of negatives approximating to the required character can be made by exposing an ordinary gelatino-bromide plate through a double screen of chrysophenine yellow and R. R. methyl violet, a commercial orthochromatic plate (*erythrosine-cyanine*) through a screen of brilliant yellow, and a special cyanine plate through a screen of deep chrysoidine orange.

With the comparatively imperfect adjustments, wonderful results have been obtained. It is, however, desirable that the process be extended to the production of fixed pictures on paper and glass, an extension of the process which involves much complication.

It is necessary to make pigment prints from heliochromic negatives, and, inasmuch as the mixture of pigments adds shade to shade, instead of light to light, pigments must be used the colors of which are complementary to those rays of the spectrum which represent the primary color sensations. Such colors are Prussian blue, eosine red, and brilliant yellow.

Prints properly made in these colors, blue from the negative representing the yellow color sensation, red from the negative representing the green color sensation, and yellow from the negative representing the blue color sensation, when superimposed on a white surface, show the light and shade and colors of the object photographed almost perfectly.

There is much yet to be done in perfecting this part of the operation,—the best results being obtained by the glass positives of the magic lantern.

The blue print is made by the cyanotype process in a film of gelatine attached to glass; the red is made by the carbon process with eosine for coloring matter, a reverse negative being thickly coated upon another glass. The yellow print is made by the collotype process or specially prepared film of collodion and gelatine. Several of the red and yellow prints are made, and such prints selected as are found to produce a neutral black in the shadows when superimposed with the blue print over a white surface.

After placing the yellow film picture between the blue and red pictures on glass, and therefore in contact with them, they are moved.

The above is a brief statement of the principles and practice of the process.

Mr. C. H. Bothamley, of England, in a communication to the *Photographic News* for January 11th, questions the validity of the claim Mr. Ives makes as the discoverer of the new principle.

Mr. Bothamley says:

"Recently Ives has described a process of heliochromy, of which he says, 'I claimed for this process that, unlike any similar process yet suggested, it was based upon a true conception of the nature of light and color-vision, and was a strictly scientific method of accomplishing the object sought after.' Now, as a matter of fact, a strictly scientific process of the same character was described by Dr. Vogel, in 1885. Moreover, Vogel's process does not differ very greatly from the later process of Ives."

In reply Mr. Ives says:

"By this time I am well used to having my original inventions and discoveries claimed for others, but I am surprised that so intelligent a writer as Mr. Bothamley should have failed to see at once that there is a very, very great difference between Dr. Vogel's process and my own. It is even somewhat amusing to know that while some are professing not to be able to see any essential difference between my principle and that of Hauron, others may be equally unable to see the difference between it and one that calls for the production of more than twice as many negatives, and in no way, even remotely, suggests my plan of representing most of the primary spectrum colors by color mixtures. I am sure a comparison of the three methods must make it evident to any unprejudiced person that each one is vitally different from either of the others.

"Hauron's principle, as nearly as I have been able to get at it, was simply that of making sets of heliochromic negatives by exposing sensitive plates through 'orange, green and violet glasses,' and from these negatives, prints in blue, red and yellow pigments, superimposed on a white surface. Although no approved theory of the nature of light and color-vision warrants such an assumption, Hauron assumes that this method should produce pictures correctly reproducing the light and shade and color of the objects photographed.

"Dr. Vogel's principle is stated by Mr. Bothamley, in the *Photographic News*, September 9, 1887, as follows: 'Vogel proposes to make a much larger number of images, and to use sensitizers corresponding with every region of the spectrum—for example, naphthol blue for red, cyanine for green, the ordinary sensitiveness of the plate being sufficient for blue and violet. In taking the negatives the intensity of the blue and violet must be reduced by means of a yellow screen. The fragmentary images thus obtained are transferred to stones, and each is printed in a color complementary to that part of the spectrum to which the particular plate was sensitive. This comple-

mentary color is found, however, in the dye which is used to sensitize the plate.' Mr. Bothamley adds, 'It is obvious that the greater the number of spectrum regions represented by separate images in this way, the more accurate will be the reproduction of the different shades and variations of color.' In short, Dr. Vogel's principle really calls for a different negative and print for each primary spectrum color, of which there may be said to be either seven or a thousand, although even at the least estimate, which is quite unscientific, the number is already so great as to make the process absolutely unworkable wherever it is necessary to expose all the plates simultaneously, as in landscape photography. It is also certain that no known color-sensitizers will sensitize bromide of silver for such narrow bands of the spectrum exclusively. The process is not scientific, because it is impossible. My own method is perfectly distinct from Hauron's, in that I do not expose sensitive plates through 'orange, green and violet glasses,' and from Vogel's, in that I do not make separate negatives for each region of the spectrum, but only three, and in such a manner as to secure curves of intensity which correspond to the action of the light rays upon the sets of nerve fibrils which produce color-sensation. This, in fact, is my principle, which is undoubtedly new and true, and is carried out by exposing color-sensitive plates through compound color-screens, which have been adjusted by experiment in photographing the spectrum itself, until they yield negatives having curves of intensity like the curves of a diagram correctly representing the action of the spectrum upon the sets of nerve fibrils in the eye. A knowledge of the true nature of light and color-vision makes it evident that there is no theoretical requirement for more than three negatives, with which accurately to reproduce the color effect of every part of the spectrum, and of every natural color, provided that these negatives are made according to this principle.

RAPID HYDROKINONE DEVELOPMENT.

THE objection which we mostly hear raised against the hydrokinone developer is that its action, when it is used in conjunction with alkalies giving the best results, is slow. Slowness of development is objectionable for several reasons. In the first place, there is the obvious reproach that if as good results can be obtained by rapid development, it is loss of time to have to spend longer than necessary in watching the evolution of the image during its gradual production.

There is also an objection to slow development which is probably too often overlooked. The light of the dark room is not absolutely without effect upon the sensitive surface of the film, and although, when the medium used to filter out the more active rays of light is well chosen, there may not, in the short time necessary for putting the plate in and out of the dark slide, and for the development itself, be sufficient evidence of the action of the light to be detected in the image, yet, with a prolonged development, the conditions are altered, and a certain amount of fogging may supervene, which would have been avoided by a quicker process.

It is not unlikely that many cases have arisen in which the inexperienced—or those who do not realize the fact that all light, of whatever color, has an action upon the sensitive film which may be made evident if only it is exerted for a sufficient length of time—have condemned either the plates in use, or a particular process of development, as one yielding a fogged result, when the true explanation would have been the fact that has just been referred to. It is obviously wise, in cases of prolonged development with a film of high sensitiveness, to adopt the precaution insisted upon by Mr. C. Bennett, when describing his method of working rapid gelatine plates, of covering the dish during the stay of the plate in the developing solution. Mr. Bennett's plan of development was, as it happens, a rapid one: but if such a precaution was desirable with a short development, it is certainly very much more needed when the process is lengthened.

Another objection to slow development, and probably that which is of most weight, is that, with professional portrait photographers, it is desirable to know as quickly as possible whether the result of the pose has been satisfactory, so that the sitter may be dismissed, or another plate exposed without unnecessary loss of time. On all these grounds, and in view of the increasing use that is made, and that seems likely to continue to be made, of hydrokinone as a developing agent, it is interesting to record that recent experiments with this substance in conjunction with a mixture of caustic and carbonated alkalies, have led to the publication of formulæ in the use of which the good qualities of hydrokinone appear to be preserved at the same time that the action of development is completed within a very short time—shorter, indeed, than it is customary to occupy with the pyrogallic method.

The last number of the *Photographische Mittheilungen* contains two articles on the employment of a small quantity of caustic alkali in conjunction with a larger amount of carbonated alkali for use with hydrokinone in development. The first of these articles is by Herr P. Baltin, to whose previous experiments with hydrokinone and potash we referred in a recent article. He sets out by remarking that the great general disinclination which exists among practical photographers to using caustic potash in the developer, and which, for the most part, appears to be perfectly justified, and has been recently much expressed, has induced him to call attention to what may be said in its favor. It can scarcely be disputed, he adds, that no variation of the hydrokinone developer works so rapidly and energetically as hydrokinone with caustic potash, whether the latter is employed only as an accelerator in conjunction with carbonate of soda or of potash, or whether it is used alone. The general application of the latter method has to contend with the vexatious frilling so apt to occur.

That this occurrence of frilling is not a necessary result of the method just mentioned, is evidenced by the fact that Herr Baltin for some months past, in the busy studios of Selle & Kuntze in Potsdam, has used no other developer than that of hydrokinone and potash, the work including negatives—on which, of course, no risk would be run—of the Imperial family ; and, throughout, frilling did not arise.

It is advisable, Herr Baltin remarks, not to use the caustic potash in large proportion, and not to add it to the mixed developer until shortly before using. For some time past he has kept the hydrokinone mixture in a concentrated solution as follows :—

Hydrokinone	100 grains
Sulphite of soda	600 "
Carbonate of potash	1,200 "
Distilled water	6 ounces 3 drams

This solution is diluted for use, 1 part to three of water, and then to each ounce is added from 4 or 5 up to 8 or 10 minims of a 40 per cent. solution of caustic potash.

With regard to the use of distilled water, we may remind our readers that water which has been boiled and allowed to cool in a closed vessel, say in the kettle in which it has been boiled, is as suitable for many purposes—this, amongst others—as distilled water. It is, indeed, preferable to distilled water that has been standing for some time in a vessel partly filled with air and not well stopped. Such boiled water may advantageously be used not merely for mixing the strong solution, but for diluting it for use. Where the ordinary tap water is highly charged with carbonic acid as

well as oxygen, the precaution of boiling before use is additionally desirable, otherwise an undefined amount of the caustic alkali is carbonated, and some uncertainty must result. It may be well to remind our readers of the necessity for seeing that the hydrokinone is perfectly dissolved in the sulphite of soda solution before adding the carbonate of potash.

The advantage of this formula consists, in the first place, in the rapidity of the development, which we are told is concluded, on an average, in the space of from one to two minutes. In this connection it is well to bear in mind the important influence that is exerted by temperature in regulating the time required for the action of development. The photographer who is not impressed with this fact, and whose dark room is not well warmed, would be liable at this time of the year either to remove the plate from the developing solution before the action was completed, or to find the time required for development so much longer than expected, that he might think there was something wrong with the formula, or that its rapidity of action had been greatly over-stated.

A second advantage consists in the number of times for which the same solution may be used; as an example of this Herr Baltin has, in a quantity of about ten ounces of solution, developed one after the other twenty-one double cabinet plates, 7 by 9½ inches, and two cartes-de-visite plates, 8 by 15; and this without any addition during the development of the whole of the series. All the negatives were taken in the ordinary course of the day's work, and some of them had received long and others short exposures, but all came out successfully. The developer had lost in volume by adhesion to the plates by more than half, and had become somewhat brown. It appeared, however not to have lost its energy, and was only discontinued for want of more exposed plates to develop. According to the observations and experience of this writer, such a continuous use of a developer not containing caustic alkali would not have been possible.

It must however freely be admitted that it is not every plate which will bear to be developed with caustic potash. The plates used by Herr Baltin were almost exclusively those of Lomberg, and this make is prepared with a substratum of chrome gelatine. Such plates bear a considerable addition of caustic potash without the special precautions which are otherwise necessary; such precautions being the employment of a salt bath (solution of common kitchen salt) before fixing, and the use of a dilute hypo bath. This substratum of chrome gelatine appears to be the safest and best means of preventing frilling. Herr Baltin does not doubt that the use of caustic potash in the developer will, on account of its preponderating advantages, become general, and that there is no reason why the use of a substratum should not become general also, especially as there is no objection to it, whatever the developer employed.

Dr. H. W. Vogel, in a note upon Herr Baltin's paper, considers that in consequence of the frilling which he has experienced when using caustic potash, the formula described is not advisable when long development is in question, but may be recommended for portrait work, with which rapid development is the rule. It does not appear, however, that the same plates were used by the two experimentalists, and it may well happen that of two makes, although both prepared with a substratum, a difference in the substratum itself, if not in the sensitive emulsion, might be sufficient

to account for frilling in the one case and not in the other. Some of our English brands are remarkably free from tendency to frill, and if the method described prove on all hands so advantageous as represented, those manufacturers whose plates do not possess sufficient resistance to a frilling action will doubtless see the necessity of complying with the requirement of any process which may be largely adopted, and for which a tendency to frill in the plates used is a fatal objection.

When recently discussing the subject which forms the heading of this article, we found ourselves compelled, by want of space, to leave over for future treatment the consideration of a paper by Captain Eugen Himly, which appeared partly in the same issue of the *Photographische Mittheilungen* as that in which the communication of Herr Baltin on the same topic was published.

Captain Himly's paper treats of a comparison between pyro developer when combined with the fixed alkalies, potash and soda; and the hydrokinone developer when prepared with and without the addition of meta-bisulphite of potash; and with and without the employment of a small quantity of solution of caustic soda as an accelerator. In the course of his experiments, he has come to some conclusions which may serve to form a useful basis for guidance. Among these conclusions we may mention the following. He considered it desirable to ascertain the smallest amount of hydrokinone with which development can be satisfactorily carried on, and how much meta-bisulphite of potash is necessary for the preservative solution, whether of pyro or of hydrokinone. On the former of these heads, he concludes that about two grains of hydrokinone to the ounce of water is the smallest quantity to be employed, otherwise the developing action is very slow, and the process tedious. With respect to the last-named point, it must, however, always be remembered that temperature possesses a remarkably powerful effect, so that the solution which will be best and most convenient in one country or at one season of the year, is not necessarily the best under other conditions, and the duration of development will be so much affected by differences of temperature, that unless this fact is borne in mind the photographer is likely to be either misled as to the exposure that the plate under development has received, or to imagine that some unexplained change had occurred to his solutions.

A point of great importance is stated by Captain Himly, and his statement concurs with what has reached us from other quarters—namely, that the addition of a small quantity of caustic alkali to either the carbonate of potash or soda developers, confers more brilliancy and more detail upon the negative,—advantages independent of that for which it was added—its great accelerating influence. This is a very curious and unexpected result, the general effect of an accelerated developer when using pyro and ferrous oxalate not being in favor of additional brilliancy, at all events.

As to the use of meta-bisulphite of potash, Captain Himly finds that, when used in too great proportion, it retards development considerably, but is notably more powerful as a preservative in the solution than sulphite of soda alone. When color of the image is important, however, it is not desirable to omit the sulphite of soda, or even to reduce the amount of it, when meta-bisulphite of potash is used, as the former salt has such a beneficial effect upon the color of the deposit.

As the result of Captain Himly's researches, he recommends the following developer, here put into English measures:—

HYDROKINONE AND CAUSTIC SODA DEVELOPER.

Solution A.

Hydrokinone	40 grains
Meta-bisulphite of potash	16 grains
Water	2¼ ounces

Solution B.

Caustic soda	1 ounce
Water	8 ounces

To five ounces of water, half an ounce of each of the above solutions is added. This developer is recommended as very good for negatives, but not for positives upon bromide of silver emulsion paper, as the tone is very unequal, and for the most part of a reddish color.

HYDROKINONE AND POTASH DEVELOPER.

Solution A.

Hydrokinone	40 grains
Meta-bisulphite of potash	16 grains
Water	2¼ ounces

Solution B.

Carbonate of potash	1 ounce
Sulphite of soda	½ ounce
Water	10 ounces

For development, ten parts of A and from fifty to seventy-five parts of B are added to from fifty to twenty-five parts of water, according as it may be desired to produce a soft or a powerful negative. As accelerator, six minims of the one-in-eight solution of caustic soda above mentioned is to be added. The addition is stated to have also a favorable influence upon the color of the deposit. This developer is also recommended as very suitable for positives.

HYDROKINONE AND SODA DEVELOPER.

Solution A.

Hydrokinone	40 grains
Meta-bisulphite of potash	20 grains
Water	2¼ ounces

Solution B.

Carbonate of soda	1 ounce
Sulphite of soda	½ ounce
Water	10 ounces

For development, to ten parts of A from fifty to seventy-five parts of B are added, and fifty or twenty-five parts of water, as with the potash developer.

This developer also works noticeably better when six minims of the one-in-eight solution of caustic soda as accelerator is added. The developer works exceedingly well, both for negatives and for positives upon bromide of silver emulsion; and is especially good for the latter purpose, the tone being very even. It is recommended, before washing, to immerse the print for a short time in a dilute acetic acid solution, which discharges any yellow color that may have appeared upon the paper. The

use of a bromide as a restrainer is unnecessary, this function being sufficiently fulfilled by the meta-bisulphite of potash.

In the table of comparative results given by Captain Himly, caustic potash shows a less favorable action than caustic soda, and the latter is therefore recommended. On other accounts—less cost, and greater freedom from impurity—soda is also to be preferred.

Those who are contemplating using hydrokinone for the first time, should bear in mind points that have been mentioned in former articles. The carbonate of soda required is not the powder sold under that name, and known also as sesqui-carbonate and bi-carbonate, but the crystals. Washing soda, if moderately pure, generally answers perfectly. The precaution of using for the hydrokinone solution either distilled water or water that has been boiled and allowed to cool, must be observed, as well as that of thoroughly dissolving the sulphite—when sulphite of soda is used—before the addition of the hydrokinone. Sulphite of soda must be in good condition—must not have effloresced.

Development by hydrokinone has been making way by leaps and bounds. The present modification—that which removes the one most serious objection hitherto raised to its use (slowness of action)—appears at the same time to confer additional good qualities on the negative itself, and seems likely to bring the method into a much more extended application than hitherto enjoyed.—*Photographic News.*

SURFACE OF PHOTOGRAPHS.

IN a recent article by Mr. W. K. Burton,* some reference is made to the subject of photographic prints. It is always a pleasure—now, unfortunately, a rare one,—to meet with a paper of Burton's, from which experience has consistently taught us to expect to gain something useful. In the present case, amongst other things, he has touched, almost parenthetically, upon the subject that gives the heading to this article—a subject which, however, may properly form matter for more extended discussion. In the paper referred to, Mr. Burton, whilst giving directions for obtaining the highest surface of which paper is capable, by stripping a gelatinized film from glass, and saying, "I will even confess that the brilliant gloss that is so easily got on this paper has a certain attraction for me," yet adds, apologetically, "I am not Philistine enough to prefer a glazed to a really matt surface, but I am prepared to support the opinion that if you do have a gloss, you should have a good one whilst you are at it." There are, no doubt, good grounds for the predilection for the glossy surface of a print stripped from the glass, but why should it require a "confession," in order to declare approval of such a surface?

If I may be allowed to be a little discursive, I will say that I should like to get an authoritative definition of the word "Philistine," used in its modern sense. I am aware that a recent writer has put it that "he who does not understand what a Philistine is, stands self-convicted; he must belong to the tribe." A bit of more positive indication of the character of a Philistine is given by the same writer when he says, "The Philistine is nothing if not the slave of conventional propriety." I have else-

* *Photographic News*, 1888, p. 743.

where heard Philistinism defined as "the opinion of those people who differ from the speaker." Perhaps this definition might be made a little more precise by limiting the opinions condemned to opinions on questions of taste and sentiment; and in matters of art the word Philistine, as a reproach, appears to be used as the special property of that sect which professes to despise what appears beautiful to those whom they consider to be the uncultured. Their own particular admiration, when delineation of the human form is concerned, is reserved for vacuous or woebegone representations of it, in which anything of health and ruddiness of color is banished from the face, in favor of a corpse-like, livid, or greenish-yellow hue; color of a more sanguine character only being tolerated when lavished upon the hair.

The question as to whether a glossy or a matt surface is to be preferred for photographs, is not quite so simple as might at first sight appear. It is complicated by the further question as to whether certain effects, which it may be desired to obtain, can only be produced in company with one or other of the two conditions of surface under discussion.

The learned Dr. Stolze, in an article on "The Tone and Surface of Photographs," has touched upon this subject. Had his paper been confined to the subject of surface only, he would doubtless have given us his views with greater fulness on this branch of the subject. In explaining, however, why it is that for small pictures matt surface paper is not employed, he says that "up to the present it has not been practical to produce paper of this character (matt surface) in which the picture rests entirely upon the surface, as it does with albumen paper, or with chloride of silver emulsion paper, whereby all the details are preserved; so much desired in photographs of small size." Further on, he adds, that even in oil painting, when small pictures are in question, they are produced on a basis of copper with a fineness and smoothness of surface in contrast to that seen upon larger paintings. He refers also to miniature paintings -paintings on porcelain and enamel—as instances of fine surface and high gloss in artistic productions. As to the reproach which has been brought against photographs having a glossy surface, that they resemble lacquer work, he inquires why the comparison should be made with lacquer work, and not with enamels, which are so highly esteemed.

I suppose many photographers must have been nauseated in times past—I am sure I have—with references to the "vulgar gloss" of albumen prints; comparison with the surface of a tea-board, and so forth. Dr. Stolze's question comes in here aptly enough. The use of the word "vulgar" of a thing which is not essentially so, always seems to me to be gratuitously offensive, and reminds me of an observation that the readiest to apply to others the word "cad" are those who have the strongest claim to the distinction themselves. Whether or not a glossy surface is in itself desirable, there is one case in which it is certainly disadvantageous. When a surface is in itself rough with an irregular kind of roughness, and a varnish is applied which does not completely fill in all irregularities, but leaves some standing up on the surface, such irregularities will be more conspicuous, and the gloss then gives the idea of an unsuccessful attempt to simulate a really fine surface. As an instance of this we may take furniture of the cheaper kind, where such parts as the carved work on side-boards or chair-backs is roughly finished and then varnished; possibly even in the varnish itself there are bits of dust left to show as raised

irregular specks. If the expression "vulgar gloss" is anywhere applicable, perhaps this is a good opportunity to employ it. In photography a somewhat similar effect may be produced by mounting a print having a highly glazed surface with paste containing lumps or fragments of dirt. In these cases the gloss is objectionable as making defects more conspicuous. These defects, however, should be blamed, and not the gloss.

A real objection to a glossy surface in photographs is that reflections in it may interfere with the details of the subject which is represented in the picture. With small pictures these reflections are not commonly seen in the position in which the picture is held for examination. With larger pictures on glossy surfaces, reflections will or will not appear, according to the position in which they are placed, and the light object is nearly in the same line from the picture as the eyes of the observer. Whether, for large pictures, the objection on the score of reflection has greater weight than the advantage of a glossy surface in yielding representation of detail, may fairly be matter for argument.

The greater amount of detail as well as depth in the shadows of a photograph, that is obtainable in conjunction with a glossy, in place of a matt surface, is not to be denied. This deficiency of detail in the shadows, however, differs materially in various processes, and this consideration may induce the hope that, in time, a matt surface process or method of printing may be found, in which detail will be rendered more perfectly than in any at present in use. The power of rendering detail in the dark parts is no doubt greatly influenced, as stated by Dr. Stolze, by the keeping of the image upon the surface; but that this is not the only effective cause is shown by the fact that an albumen print stripped from glass, or even coated with polishing paste, will show more detail than the same print when not so treated.

It may be said that we do not require to see details strongly in the shadows of a picture, and that therefore the partial loss of such details by printing on a matt surface paper is an advantage rather than otherwise. To this it may be replied that the tendency of photographic processes is to fail in portraying the range of tone at the ends of the scale, and if the photograph is not over-exposed for the lighter tones, the deeper half-tones will not be represented so fully as in nature. It may also be said that in some cases the shadows are too much broken up by disturbing lights. To this again it may be replied that the lights in such a case are not those truly belonging to the lower half-tones, and if the latter had been given their proper value, the disturbing lights would not be so pronounced and attractive. It will probably be generally recognized that the most striking difference between an average photographic representation of a scene, and that of a good steel or copper-plate engraving, is that in the former case there are large masses of comparatively blank shadow, unrelieved by the delicate detail which we see in nature; and which are represented, not obtrusively, in the engraving. The engraving is on matt surface paper; why, therefore, it may be said, should not a photograph on paper of similar surface be equally satisfactory in the definition in the shadow? Here it may be observed that the engraver has it in his power to make his deepest shadows and deep half-tones relatively to each other, of any force he likes; and chooses that strength which, on the paper, and with the ink with which he works, will give him the desired effect.

That there is a great difference in different printing processes, in their power of

rendering detail in the shadows while preserving a matt surface, is evident from various examples. It was the practice, some thirty years ago, at some of the photographic establishments of the more expensive order, to produce portraits of whole-plate size and larger, upon paper salted and not albumenized. The poverty of the shadows was, however, so great that they were almost always worked up to some extent, and their value depended upon the amount of artistic ability possessed by those who practised the working up. There was, however, one firm which, as I believe it has long ceased to exist, I may mention by name, Hennah and Kent, of Brighton, who had a special method of printing, by which more vigor and detail in the blacks was obtainable than could be produced upon ordinary salted paper. Their paper was, I think, prepared with gold, as well as with silver, before printing upon. At all events, their work was so good that with very little touching, satisfactory prints were produced, and a connection was obtained extending far beyond their own locality. There was still wanting, however, the full richness and detail of the shadows that characterize albumen prints, and when Adam Solomon took the photographic world by storm, his prints were made, not merely upon albumen, but a gloss was superadded by means of a polishing paste. His work in portraiture has been considered as never to have been surpassed, certainly not by those who, like him, were confined to the use of collodion for making their negatives.

In platinum printing by various methods, such variations in the power of rendering details and depth in the shadows have been shown, and some of the results in this respect are so good as to allow us to hope that finality in this walk has not been attained, but that improvements will yet be made by which the shadow details will more nearly approximate in luminosity those obtainable upon albumen or other glossy surface paper. In photo-engraving processes, too, wonderful advances have been made in this direction. I have before me a heliogravure by Blechinger, published as a supplement with the *Photographische Correspondenz* for March last, that strikes me as the most beautiful specimen of a photographic production upon matt surface paper that I have ever seen. Whether the exceptionally fine quality of the negative (it is stated to be taken on an orthochromatic plate by Angerer) is the main cause of such an approach to perfection I cannot say. It would be very interesting to see a print on albumen or collodion paper, and one on a matt surface paper by the best chemical printing processes, silver and platinum, for comparison.

Gloss itself, provided it exists upon a fine, smooth, flat surface, is of secondary consideration. If, in the present state of photography, there is no means of obtaining such perfectly natural rendering of existing detail on a matt surface as on a glossy one, there is no necessity to apologize for using the latter when it is desired to represent fully all the detail that photography has given us in the negative.

W. E. DEBENHAM, in *The Photographic News.*

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED meeting of the Society was held Wednesday evening, March 6th, 1889, with the President, Mr. Frederic Graff, in the chair.

The Secretary reported the death of Mr. Emlen Cresson, an active member of the Society, which occurred suddenly on the 2d inst.

He also reported the presentation to the Society, by Mr. Frederic E. Ives, the author, of a copy of "A New Principle in Heliochromy," and by Mr. Edward T. Wilder, of Boston, of a pamphlet entitled, "The Dawn of Photography," by Wm. T. Brigham, both of which were received with a vote of thanks.

Exhibition circulars, etc., were received from the Columbia College Amateur Photographic Society, The Montreal Amateur Photographic Club, and the International Photographic Festival and Exhibition, to be held in London, Eng., during March.

The Executive Committee presented a report proposing a plan for the selection annually, by vote of the members, of four "Honor Pictures." The pictures submitted for this purpose to be exhibited in the room of the Society during the month of December in each year, and to be from negatives made within eighteen months of the date of this exhibition. Each member to have one vote for four pictures, without restriction as to the number to be selected from the work of any one exhibitor. The report was accepted, and the proposed plan adopted.

The Committee on Lantern Slides made the following report:

Your Committee on Lantern Slides begs leave to report that at the Conversational Meeting, February 19th, the slides of the Philadelphia Amateur Photographic Club were shown. The Committee venture to express the opinion that these slides were the best of the Interchange series presented this season, both technically and artistically. Subsequently, slides were shown by Geo. B. Wood, R. T. Hazzard, Robt. S. Redfield, F. T. Fassitt, David Pepper, F. G. Rosengarten, O. D. Wilkinson, William H. Rau, C. P. Sinnikson, and John A. Schulz.

The Manager of the American Lantern Slide Interchange has notified us that the English slides have arrived from London, and will be here during the Joint Exhibition.

Several gifts of slides have been received, of which report will be made.

WILLIAM H. RAU,
FRANK BEMENT,
EDMUND STIRLING, } *Committee.*

The Committee on Joint Exhibition reported that responses from the foreign edition of circulars were beginning to come in, and a fine series of yacht studies by Messrs. G. West & Sons, of South Sea, England, and also some pictures from Russia and Germany, had already arrived. Other foreign exhibits from distinguished English photographers were in prospect. The interest displayed by photographers in all parts of this country, not members of either of the three societies, was quite gratifying, many having expressed their intention of exhibiting.

Members, and other intending exhibitors, were reminded of the near approach of March 25th, the date fixed when all exhibits and entry forms must be in the hands of the Committee. The Committee being entirely dependent upon the applications for entry blanks as a means of knowing what exhibits can be depended upon, it was urged that every *intending exhibitor* notify the Committee of his intention at the *earliest possible date*, and also that exhibits be delivered as promptly as they can be

made ready, so that the inevitable rush of work at the last moment be relieved as much as possible.

The Committee on Membership reported the election of the following active members: George B. Philipps, Dr. William M. Sweet, James Laurence Dillon, Emlen L. Carolus.

A letter was read from Mr. W. E. Barrows, a member of the Society, as follows:

ROBERT S. REDFIELD, ESQ., *Secretary.*

DEAR SIR:—Having occasion to use hyposulphite of soda for precipitation where freeness of oreign matter was important, we filtered fifteen pounds of that article through the accompanying filter. The hyposulphite of soda was purchased for photographic purposes from a manufacturer of established reputation in Philadelphia.

Query: How many good pictures have been spoiled by the dirt in hyposulphite of soda?

Very truly yours,

Phila., Pa., Feb. 20, 1889. W. E. BARROWS.

Accompanying the letter was a piece of filtering paper containing a large amount of "foreign matter," which had been filtered out of the solution.

The condition of the filter seemed to indicate that Schuylkill water in its *most natural state*, had been used either in the original preparation of the hyposulphite of soda, or in the solution which had been filtered. How far such impurities could effect photographic operations was not discussed.

Mr. Theodore H. Luders read a paper on the treatment of windows in connection with interior work, recommending the use of flash light compounds for obtaining the view beyond the windows, as well as the interior itself.

WINDOWS.

Anyone who has made photographs of interiors has doubtless taken more or less interest in the window question, and tried in various ways to overcome the great difference in time of exposure necessary for the windows and the interior part of the room.

These ways include shading and closing windows, inside and out—the local use of restrainers in development, and of vignetting in printing, etc.

Wishing to try an experiment in developing, and having no plate exposed, I set up a small camera opposite a window when it was almost dark, and left it for ten or fifteen minutes while I prepared my developer.

When the plate was developed, I found an image of the window sash, curtains and shutters, and also of the trees and houses on the opposite side of the street, but nothing of the inside of the room. This suggested the possibility of getting a picture of the interior with the view outside on the same plate, and the flash light seemed the thing to do it with.

The exposure by flash light may be done at the same time as the other if the lens will permit, or if it is not desired to have the outside in focus, or it can be done after dark with a different stop and so have the whole picture sharp.

The mode I found successful was to focus with the stop I intended to use for the flash, bringing the interior sharp, then inserting a small stop, and giving a suitable exposure for the outside about the same as if I was working out of doors—rather a full than an under exposure, preferably late in the afternoon, even after sunset; then capping my lens I inserted the large stop, and left the camera closed till it was quite dark, when I uncapped it and fired my flash powder.

The usual development seemed all right, and the result may be judged by negatives and prints shown.

In the "British Journal Almanac," 1889, there is a somewhat similar method described by an Australian correspondent, who uses, instead of flash light, ordinary gas with long exposure.

Much might be said about the desirability of having in and outside both in focus at the same time, but that is a matter for individual taste and circumstances to decide.

I think anyone who cares to try this experiment will find it quite interesting, and another pleasure added to the many that photography gives us.

THEODORE H. LUDERS.

Dr. Reed showed a film carrier, designed for use with Carbutt films, which had been brought to the meeting by Dr. Hollingsworth, a visitor, who had designed it.

Mr. Earle showed a flash light devised by Mr. Edward M. Pim, a member of the Society. The flame was produced by a coil of wick about two inches in diameter, which was saturated with alcohol. Tubes of glass about two inches long, corked at each end, were loaded with about ten grains of powdered magnesium. A tube of magnesium could readily be inserted in a brass tube beneath the wick, the corks being removed as it was inserted. Pressure on a rubber bulb, with tube connection, forced the magnesium powder through a slit in the center of the wick, producing a very brilliant light, which, by means of a cardboard reflector attached to the lamp, could be directed as desired.

Dr. Trueman showed an attachment for use with the Scovill Detective Camera, by means of which the shutter could be readily operated, either for time or instantaneous exposures.

A device for setting the shutter of a Scovill detective camera, obviating the use of the usual string provided for the purpose, was described by Mr. Pettit.

Mr. Graff showed a portrait transparency made in 1845, by Mr. Langenheim, of Philadelphia. The precise process used was not shown, though, at that time, the paper prints known as Talbotypes were in vogue. The transparency was in a most excellent state of preservation, though, apparently, some detail in the whites was lacking. It had a peculiar, warm, purplish brown tone, which, so far as known, was the original color.

Adjourned.

ROBERT S. REDFIELD,
Secretary.

PARIS EXHIBITION REGULATIONS FOR PHOTOGRAPHERS.

A COPY of the full text of the rules relating to photographers in the coming Paris Exhibition has been sent to the editor of *The British Journal of Photography* by W. H. Harrison. The rules are signed by M. G. Berger, Director-General of the Exhibition, and by the Commissioner-General M. Lucien Dautresme, Minister of Commerce and Industry.

The following is a translation by Mr. Harrison.

ARTICLE FIRST.—The right to take photographic views in the Universal Exhibition of 1889 will not be made the object of any monopoly or exclusive privilege. All photographers permitted, on application, to take pictures within the Exhibition limits, and upon the days and hours fixed by the Administration, must be provided with an authorisation, signed by the Director-General of the "Exploitation." For that which

concerns the Fine Arts group (classes one to five) the authorisations must be signed both by the Fine Arts Director, and by the Director-General of the Exploitation.

ARTICLE SECOND.—Photographers authorized, under Article 1 of the present regulation, will work at fixed times. For each of these admissions a payment of twenty francs (sixteen shillings), to go to the Administration, must be made for each apparatus employed. This payment must be made and receipted in the cashier's office at the Exhibition. The admissions will have a duration of four hours; either from eight in the morning until midday, or from ten in the morning until two in the afternoon. All authorisations will be valid only for the days and hours indicated. The Director-General of the Exploitation will always have the power of renewing them, without additional payment, if they have not been used on the days and hours fixed.

ARTICLE THIRD.—Applications for authorisations addressed to the Director-General of the Exploitation must state:—1. The number of assistants the applicant intends to employ. 2. A statement of what apparatus he intends to use. 3. A formal declaration that the applicant takes the whole responsibility of any consequences his reproductions may entail. 4. An undertaking to conform to the police regulations and the rules of the interior.

ARTICLE FOURTH.—Season tickets at the price of 300 francs for each piece of apparatus employed, available during the whole term of the Exhibition, at the hours fixed by Article 2, will be issued to those photographers who apply for them.

ARTICLE FIFTH.—Assistant operators, like the operators themselves, must pay the same entrance fee as an ordinary visitor, in addition to the sum paid for authority to photograph.

ARTICLE SIXTH.—Operators admitted to photograph must not, under any circumstances, introduce within the Exhibition fire, or explosive or inflammable substances. Their preparations must be made outside the limits of the Exhibition.

ARTICLE SEVENTH.—All reproduction of objects exposed, whatsoever be the nature of the said objects, is absolutely subject to permission being given by the exhibitors thereof or their authorized agents, countersigned by the Director-General of the Exploitation.

ARTICLE EIGHTH.—Photographers furnished with authorisations have the right to take general views of the palace, parks, and galleries, on condition that they send ten proofs of each view to the Administration.

The above is the last of the conditions laid down in the official regulations relating to photographing inside the Paris Exhibition.

LITERARY AND BUSINESS NOTES.

THE First Annual Exhibition of the Photographic Society of Chicago, will be held in May, 1889. A number of medals and diplomas will be awarded. Photographers can become associate members of this society and compete for prizes on payment of a small fee. Any photographer can obtain a programme from the secretary.

President, Judge James B. Bradwell; Treasurer, G. A. Douglass; Secretary, C. Gentile. Executive Committee: M. J. Steffens, Frank A. Place, Dr. H. D. Garrison.

WE have received the first number of *Tydschrift voor Photographie*—Journal of Photography,—published by the Dutch Society of Amateur Photographers (Helios) in Amsterdam. We gladly place the excellent magazine upon our exchange list, and wish the enterprising society a continuance of the energy and ability of which the first number of their organ gives abundant evidence. Prof. Van Haren Noman is the Librarian.

WE give our readers this month a series of photographs illustrative of artistic posing in photography, and of the successful adaptation of accessory foreground to picturesque effect. The photographs are the work of Mr. John G. Cassebaum, of the firm of Husted & Co., of Philadelphia,—a house long established, and always celebrated for the highest class of work. Mr. Cassebaum deserves much praise for his skill in posing his sitters in natural, unconstrained attitudes. He seems to have the faculty of getting pleasing expressions by removing all constraint from the subjects. The negatives aside from their artistic values are technically excellent, full of rich gradation of light and shade, and soft, pleasing high lights. The prints were made in the establishment of our publishers—Thos. H. McCollin & Co.

THE Third Annual Joint Exhibition of the three societies—New York, Boston and Philadelphia—will be held in Philadelphia during April 8th to 20th, at the galleries of the Pennsylvania Academy of Fine Arts, Broad and Cherry Streets.

From present indications, and judging from the experiences of the last two years, this exposition of photographic work promises to be the finest yet displayed. Great preparations are being made for the accommodation of the many exhibits. The galleries are specially adapted for the exhibition of work, and the wall space is so ample that the photographs can all be hung on a level with the eye, and so prevent craning of the neck or undignified crouching upon the floor to judge of the merits of a production. The committee has very wisely discarded the arbitrary scheme of awarding according to classification.

It is an imposition upon exhibitors to compel them to rank their pictures according to a refined system of classification.

The multiplicity of heads no doubt is intended to facilitate distribution, but it often requires a photographic Hercules to properly deal with such a hydra.

It is well, as the Committee of this Joint Exhibition has done, to ignore the fine distinctions. It enables the judges to estimate more candidly the merits of photographs, solely on their artistic and technical excellencies.

To stimulate to good work should be the object of every exhibition, and the awards should be given for general merit, and not for pre-eminence to any special class.

Very inferior work might be adjudged the highest favor in a certain section, because, like the boy who was head of his class in school, it is the only one in it, while excellent work in a more extensively cultivated process of photography might be compelled to take a lower seat. As long as a photograph has pictorial merit, if picturesqueness is the standard by which to judge, what does it matter whether that photograph be a landscape, a portrait, an interior, or a genre picture?

ONE of the French photographic journals gives an illustration and description of an ingenious little instrument called a rocket camera. It is so constructed that it may be sent up in the air like a projectile, and when on its descent automatically takes bird's-eye views of the country beneath it, by means of electrical connection with the operator on terra firma. Its importance in military operations during war is apparent, and the results obtained would, no doubt, be of considerable value, even if not photographically perfect, but we are unable to see, nor have we been informed, by what means the precious photographs secured at high

elevation, as well as the little apparatus itself, are saved from total demolition on reaching the earth, after having acquired so great velocity during the descent.

THE *Photographic Beacon*, whose light was suffered to go out after a brief illumination, has had its lamp filled, trimmed and relighted for the illumination of the obscurities of the photographic world, or rather, we should say, it has an entirely new lamp, as it starts *de novo* Vol. I., No. 1, under the able management of its former editor, Dr. John Nicol, who is certainly qualified to give his readers an excellent magazine. We wish the resurrected enterprise much success, and a long continuance with us.

SUN AND SHADE, the periodical which has demonstrated the capabilities of modern reproduction work in the various branches of art, has met with the great success it deserves. The quantity of excellent work in the shape of reproductions from paintings, original photographs, etchings, etc., has so increased the popularity of the journal that the supply of back numbers has been entirely exhausted to meet the demand, and the publishers have been compelled to re-issue the earlier copies. Everyone who wishes to know just what the highest skill in reproduction work is capable of, should subscribe to this most excellent and ridiculously cheap publication, sent out monthly by the Photographic Co., of 853 Broadway, New York City.

AMONG the excellent German photographic journals none stands higher than the *Photographische Rundschau*, the organ of the Club of Amateur Photographers of Vienna. It is now in its third year, and continues on the high plane of excellency on which it began. The February number, in addition to its numerous excellent papers, gives two excellent illustrations, the one of which entitled "Summer Flowers," is without exception the finest piece of photographic work of the kind we have yet seen. It represents a bouquet of flowers of various colors, artistically arranged, in which the tone values of the original are reproduced with marvelous beauty. The manner in which the group is illuminated bears evidence of the artistic feeling of the photographer, Herr Robert Ritter von Stockwert. He surely deserves to be knighted for his beautiful production. The reproduction is in Lichtdruck, by J. Backman, of Karlsruhe, who also deserves high praise for his beautiful work. All that the *Rundschau* tells us about the production of this artistic photograph is that it was made upon an Obernetter Eosine-silver plate (*orthochromatic*), with a Voigtlander wide-angle Euryscope lens, and the plate developed with ferrous oxalate. We hope Herr Ritter will delight the numerous readers of the *Rundschau* with more of such work.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

To the Editor of the AMERICAN JOURNAL OF PHOTOGRAPHY:

As it may be of interest to members of the Photographers' Association of America to have some idea of the awards and a description of the members' badges intended for the coming convention, the following is now submitted: The grand award, which is to be presented for the best collection of photographs illustrating Longfellow's poem, "Evangeline," is to be the original bronze cast figures, about three feet in height, and known as "The Roman Wrestlers," which was exhibited at the Paris Salon, where it was greatly admired, and gained "honorable mention." The original was imported free of duty, and not even European copies can now be had of it, unless at a very much enhanced price.

For the medals a design has been secured which is entirely new and unique.

On the obverse side will be a fine head of Daguerre in bold relief, and on the reverse figures representative of American photography.

The die is to cost $250, and the medals are to be of gold twenty-four carats fine, and finished in dead gold.

They will be placed in the shape of a badge, with bar of gold at the top for an inscription of winner's name.

Members' badges are to be of solid silver, oxidized, embellished with head of Daguerre, and may be worn suspended from coat lapel, as common with other badges.

They, alone, will be intrinsically worth the admission fee, while as souvenirs of the "Semi-Centennial of Photography," only possessed by members of the Association, they will be permanently valuable.

Very truly yours,

H. MCMICHAEL.

Buffalo, N. Y., Feb. 22, 1889.

THE subject selected by the committee of the Photographic Association of America for the prize picture is Longfellow's "Evangeline," a

subject pathetic in itself, even when wholly divorced from the poetic rendering, one rich in incident and suggestion for a picture, capable in its treatment of conveying the particular mood or temperament of the artist, and yet wholly within the scope of photography. We hope, therefore, to see some excellent results.

Last year the selection of a topic for photographic rendering was most unfortunate—a theme entirely foreign to our modern social life and its surroundings, and not at all in harmony with the conditions of savage life. The pictures of Hiawatha, not to be too severe, knowing the difficulties with which the artists were compelled to struggle, were simply ridiculous, and might have been higher prized as chromos for tobacco dealers than as specimens of the possibilities of artistic photography.

THE *Photographic Times* Publishing Company, of New York, have very kindly sent us two immense volumes of their publication, *The Photographic Times*, embodying in a most convenient shape for reading and reference the many valuable papers contributed to its pages, We do not forget the excellent illustrations, which enlivened the periodical during the past year.

MARCH BARGAIN LIST.

Accessories:

1—15-in Entrekin Rotary Burnisher 17 00
1—15-in Entrekin "Accurate" Rotary Burnisher, good as new 18 50
1—15-in Entrekin Eureka Burnisher 15 00
1—Lever Camera Stand for 14x17 Camera 10 00
1—8x10 Perfect Stand 10 00
1—Fuming Box 4 00
1—15x18 Deep Porcelain Tray . 3 00
1—19x24 Waterbury Tray . . . 2 50
1—15x18 Japan Tray 50
1—Perfect Camera Stand for 8x10 . . . . . 8 00
1—Iron Centre Camera Stand, . 3 00
1—14-in Eureka Burnisher . . 16 00
1—Seavey Swiss Cottage Accessory 12 00
1—8x10 Exterior Ground, good condition, ... 10 00
2—Spencer Head-rests 11 00
British Journal Almanacs for 1878 20
Photo Mosaics for 1883, ... 20
1—8x10 Plain painted ground . 3 00
1—8x10 Osborne's interior background, new, light left . . . 20 00
1—4x8 Osborne's side slip . . 7 50
Pearl leads, the best retouching point in the market, each . 15
5x8 Woodbury Dry Plates PER DOZ. 80
5x7 " " . . . 77
4¼x6½ " " . . . 65
6½x8½ Triumph " . . . 85
5x7 " " . . . 55
4¼x6½ " " . . . 45
5x8 Neidhardt " . . . 65
4x5 Bridle " . . . 35
1—8x10 Hough's Exterior ground, good as new, light left of sitter 9 00
1—8x10 Hough's Exterior ground, light right 8 00
1—Hough's Oak Stump 7 50
1—Osborne's No. 71 Rock Accessory 9 00
1—Osborne's Bridge Accessory . 8 00
1—Osborne's Gate Combination Accessory, new 18 00
1—5x8 Negative Box 50
3—3¼x4¼ Printing Frames, each 20
1— 9x11 " 1 75
1—10x12 " 3 00
6—6½x8½ Printing Frames, @ 40
1—8x10 Negative Box, ... 75
1—6½x8½ " " 50
1—15 inch Smith & Pattison, Quadruplex Enameler, ... 25 00

Camera Boxes:

1—14x17 American Optical Co.'s Double Swing Portrait Box, Bonanza Holder, almost as good as new 43 00
1—17x20 American Optical Co.'s Double Swing Portrait Camera, Bonanza Holder, good as new 75 00
1—43B 8x10 Anthony's Climax Camera, with Benster Holder, good as new 25 00
1—5x8 Blair View Camera, single swing 17 00
1—Climax Outfit,including chemicals, complete 3 50
1—17x20 D. S. Portrait Camera, good condition 40 00
1—4¼x6½ Novalette Camera . 16 00
1—8x10 American Optical Co.'s Royal Camera, double swing and carriage movement, . 25 00
1—8x10 Ferrotype Box, Carriage movement and glass cornered holder and 4x4 lens 30 00
1—5x8 Tourist Outfit, including 5x8 Tourist Camera Box, 2 Daisy Plate Holders, 1 Extension Tripod, and 1 Canvas Carrying Case, very little used. Price, new, $40.50, will sell for 30 00
1—10x12 Cone View Camera, Double Swing, new 52 80
1—4x5 Flammang revolving back Camera, new, ... 25 00
1—4¼x5½ No. 202 A. Scovill Outfit 20 50
1—6½x8½ View Camera and Lens 12 00
1—5x8 Wet Plate Stereo Camera, 3 holders, case and tripod . 25 00
1—6½x8½ American Optical Co. first qual. View Camera . . 23 00
1—4¼x5½ Ex. qual. Portrait Camera 17 50
1—5x8 American Optical Co. Stereo Camera 25 00
1—5x8 Scovill Camera, Lens, holder, tripod and case . . 8 00
1—5x8 Blair Compact Camera, good as new 35 00

4—5x8 Feather Weight Holders, each 75
1—8x10 American Optical Co.'s Camera, with carriage movement, fitted with 4—¼ tubes and 2 Bonanza Holders, . . . 28 00
1—8x10 Single Swing Cincinnati Ferrotype Camera, ... 18 00

Lenses:

1—Extra 4-4 Roettger Portrait Lens 20 00
1—4x5 Darlot Hemispherical Lens and Packard Improved Shutter, good as new 16 00
1—No. 1 Zentmayer Wide Angle Lens 5 00
1—8x10 Queen Wide Angle Lens 15 00
1—2A Dallmeyer Lens 82 00
1—¼ size Harrison Lens . . . 4 00
1—Extra 4-4 Roettger Lens . . 18 00
1—11x14 Roettger Lens 22 00
1—14x17 Roettger Lens 45 00
1—1 Darlot Rapid Hem. Lens, for 4x5 views 12 00
1—8x10 Beck Lens, good as new, fitted with Prosch Shutter . 60 00
1—set ¼ Darlot Tubes 13 00
1—set ½ Darlot Tubes 18 00
1—18x22 Zentmayer Lens . . . 40 00
1—4-4 Holmes, Booth & Hayden Portrait Lens 25 00
1—½ size Voigtlander Portrait Lens 10 00
1—5x8 Waterbury Lens 2 00
1—Focusing Glass 75
1—½ size Voigtlander Lens . . 25 00
1—4x5 Dallmeyer View Lens . . 12 00
1—⅓ size L. W. Krantz Portrait Lens 12 50
1—⅓ size C. C. Harrison Portrait Lens 8 00
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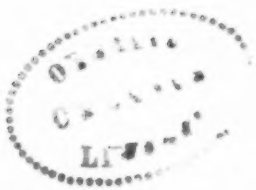

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